



2nd Assignment:

Applied Networking Lab WS 23/24

Question 1: (5 x 1 = 5 Point) Case study 1: Setting up IT Infrastructure for a Small Firm

Imagine a small firm, "TechHub Solutions," with a team of 20 employees, is expanding its operations. The management has decided to bring in a group of students as interns to deploy essential IT infrastructure components: a web server, file server, and email server.

Objective:

The interns are tasked with designing, implementing, and managing the IT infrastructure to support the growing needs of TechHub Solutions.

Deployment Steps:

Web Server: Establish an online presence for the company.

Choose an appropriate web server software (e.g., Apache, Nginx, etc..).

Configure the server to host the company website.

File Server: Centralize and manage company files securely.

Select a suitable file server solution (e.g., Windows Server, Linux-based server. Etc..).

Create user accounts and establish access controls.

Implement regular data backups to prevent data loss.

Email Server: Facilitate internal and external communication.

Choose an email server software (e.g., Microsoft Exchange, Zimbra etc..).

Configure email accounts, aliases, and distribution lists.

Implement spam filtering and security protocols.

Question 2: (6 x 1 = 6 Point) Case Study2: an enterprise that wants to establish different departments, with web, file, proxy and DHCP servers, static router IP, and switches with PCs

Acme Corp is a growing enterprise with multiple departments, including sales, marketing, finance, and engineering. The company is currently experiencing a number of network challenges, including slow performance, security concerns, and difficulty managing network

devices. To improve network performance and security, Acme Corp has decided to establish different departments with web, file, proxy and DHCP servers, a static router IP, and switches with PCs.

Network Design: Acme Corp's network will be divided into four VLANs: sales, marketing, finance, and engineering. Each VLAN will have to access web server, file server, proxy server and DHCP server. The router will have a static IP address and will be responsible for routing traffic between the VLANs and to the internet. The switches will connect the PCs to the VLANs.

Due Date: Thursday, December 3rd, 2023, 10:00 am

Upload all relevant files (answers to theoretical questions as either PDF or .txt plus, .pkt, GNS-3 config files, etc.) to ISIS:

<https://isis.tu-berlin.de/course/view.php?id=35211>

Put the names and Student ID numbers (Matrikelnummer) of **all** your group members on your solution!